Lat 40.61967 Lon -121.28769

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File Code: 3420 **Date:** September 11, 1998

Route To: 2430

Subject: Elytroderma Disease at Lost Creek, Evaluation # NE98-9

To: District Ranger, Hat Creek RD

Early this summer, I diagnosed the needle disease in the ponderosa and Jeffrey pine along Lost Creek as elytroderma disease caused by the fungus Elytroderma deformans. Under favorable site and weather conditions this endemic disease infects the needles of host trees and subsequently can infect branches. Pine stands in areas of high relative humidity (eg. around lakes and streams) are most susceptible to elytroderma. The past two Springs have been long and wet and favorable for this pathogen around Lost Creek. Many ponderosa and Jeffrey pine have been heavily infected and a few of these have been killed by bark beetles.

The pine I observed with heaviest elytroderma are around the creek in the north half of Section 3, T.31N, R4E. The overstory is primarily ponderosa and Jeffrey pine, with some lodgepole pine and white fir. The pine range in dbh from about 8" to 30" and in height from 20' to 90'. Basal areas up to 240 square feet were measured. The infected stand is adjacent to a mixed conifer stand where elytroderma disease is much less severe.

I am enclosing two papers on Elytroderma Disease; one by Scharpf and Bega: *Elytroderma Disease Reduces Growth and Vigor, Increases Mortality of Jeffrey Pines at Lake Tahoe Basin, California* and the other by R.S. Hunt: *Elytroderma Disease of Pines*. Much about elytroderma disease and its effect on pine stands is not well understood. Scharpf found that `mortality and growth losses during and for years after epidemics can be severe'. Heavily infected Jeffrey pine with low vigor experienced up to 58% mortality in seven years in the Tahoe study. Scharpf states that thinning before an elytroderma outbreak may help to reduce mortality from the disease. He also states that planting or favoring nonsusceptible species is the best way to control the disease. Hunt states that `Practical control depends on silvicultural manipulations

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such as clear cuttings in mature stands and thinnings to promote vigorous growth in young stands. Vigorously growing young stands can outgrow infections in the lower crown'.

The thinnings planned for the Lost Creek pine sites can reduce future mortality by removing the pine with the heaviest elytroderma infestation and by releasing residual pine from competition. On any mixed conifer sites in the sale, non-host trees can be favored over the ponderosa and Jeffrey pine to minimize elytroderma damage. If you have any questions, please contact me by e-mail (wwoodruf) or phone (252-6680).

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Plant Pathologist

Enclosures